

GOVERNMENT OF INDIA
MINISTRY OF ENVIRONMENT, FOREST AND CLIMATE CHANGE

LOK SABHA
UNSTARRED QUESTION NO. 1277
TO BE ANSWERED ON 11.12.2023

Climate Change

1277. SHRI VIVEK NARAYAN SHEJWALKAR:

Will the Minister of ENVIRONMENT, FOREST AND CLIMATE CHANGE be pleased to state:

- (a) whether the Government has conducted any study to identify the States which are most affected by the continuous climate change;
- (b) the details of the facilities being provided by the Government to students carrying out research on climate change; and
- (c) the name of the crops which are most affected by climate change?

ANSWER

MINISTER OF STATE IN THE MINISTRY OF ENVIRONMENT, FOREST AND CLIMATE CHANGE
(SHRI ASHWINI KUMAR CHOUBEY)

(a) and (b) Climate change is a cross-cutting issue spanning various Ministries/Departments and institutions under them. Research on climate change is mainly sponsored by the Department of Science and Technology, Ministry of Earth Sciences (MoES), Ministry of Environment, Forest and Climate Change (MoEFCC), Indian Space Research Organisation (ISRO), Ministry of Agriculture and Farmers Welfare, and Council of Scientific and Industrial Research. Sectoral aspects of climate change are also studied by different Ministries/Departments concerning sectors like agriculture, water resources, human health, power, renewable energy, transport, urban, etc. Further, many universities and government research institutions such as the Indian Institute of Technologies (IITs), Indian Institute of Science (IISc), Central and State Universities and their departments also carry out climate change related research. All such research facilities may be availed by students as per established procedure in this regard.

Government of India through its various Ministries/Departments assesses the impact of climate change in keeping with the new data and increased scientific knowledge on the subject. Also, at the State level various research organisations, universities, academia undertake studies on climate change as per their mandate. One of the studies undertaken by Department of Science and Technology to understand the impact of Climate Change is “Climate Vulnerability Assessment for Adaptation Planning in India Using a Common Framework” (<https://dst.gov.in/sites/default/files/Full%20Report%20%281%29.pdf>)

As per Ministry of Agriculture and Farmers’ Welfare, several climate change research infrastructure facilities such as Free Air Temperature Enrichment (FATE) chamber, Carbon dioxide and Temperature Gradient Chambers (CTGC), Temperature Gradient Tunnel (TGT), Eddy-Covariance Towers, Automatic rain-out shelters, Psychometric Chamber, Gas

Chromatography, Methane Analyzer, Environmental Growth Chambers, Atomic Absorption Spectrophotometer, Animal Calorimetric System, Recirculatory Aquaculture System etc. were established at several ICAR institutes including ICAR-IARI, New Delhi; ICAR-NRRI, Cuttack; ICAR-RC NEH, Umiam; ICAR-IIHR, Bangalore; ICAR-NIASM, Baramati; ICAR-IIVR, Varanasi; CMFRI, Cochin; NDRI, Karnal; CIBA, Chennai to enhance the research and development on climate change. These facilities are being extensively used by the students of M.Sc. and Ph. D. for research work.

(c) The Indian Council of Agricultural Research (ICAR), Ministry of Agriculture and Farmers Welfare, Government of India has conducted climate change impact analysis including changing monsoon patterns and its effect on agriculture sector under National Innovations in Climate Resilient Agriculture (NICRA) project. Climate change impacts crops such as rice, wheat and maize. In the absence of adoption of adaptation measures, climate change projections are likely to reduce rainfed rice yields by 2-20% in 2050 and 10-47% in 2080 scenarios while, irrigated rice yields by 2-3.5% in 2050 and 2-5% in 2080 scenarios, wheat yield by 8.4-19.3% in 2050 and 18.9-41% in 2080 scenarios and *kharif* maize yields by 10-19% in 2050 and >20% by 2080 scenarios.
